

Kolloquium Mathematische Physik

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The Widom-Rowlinson model: metastability, mesoscopic and microscopic fluctuations for the critical droplet

In this talk I will discuss the Widom-Rowlinson model on a finite two dimensional torus subject to a stochastic dynamics in which particles are randomly created and annihilated inside the torus according to an infinite reservoir with a given chemical potential. We are interested in the metastable behaviour of the system at low temperature when the chemical potential is supercritical. In particular, we compute the asymptotics of the average time the system needs to condensate and we describe the shape of the critical droplet. Our results rely on a precise analysis of the microscopic and mesoscopic fluctuations of the surface of the critical droplet. This is a joint work in progress with F. den Hollander, S. Jansen, R. Kotecky.

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